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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

CHANNAVAJJALA, SRIRAMA T

ART UNIT PAPER NUMBER

2177

DATE MAILED: 03/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/446,769

Applicant(s)

NAKAMURA, KAZUE

Examiner

Srirama Channavajjala

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 February 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. Examiner acknowledges Applicant's amendment filed on 2/24/2003, paper no.16.
2. Claims 1 and 13 have been amended, paper no. # 16.
3. The request filed on October 02, 2002 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on Application No. 09/446,769 is acceptable and a CPA has been established, paper no. # 10. An action on the CPA follows.
4. Examiner acknowledges applicant's Amendment, filed on 10/2/2002, paper no. # 12 has been entered.
5. Claims 1 and 13 amended, paper no. # 12.
6. Examiner acknowledges Applicant's response to office action filed on April 10 2002, paper no. # 9.
7. Examiner acknowledges "**preliminary amendment**", filed on 12/23/1999.
8. Claims 1-17 are pending in this application.

Drawings

9. The drawings filed on 5/5/2000 are approved by the Draftsperson under 37 CFR 1.84 or 1.152.

Information Disclosure Statement

10. The information disclosure statement filed on 9/19/12000, paper no. # 6 has been considered and a copy was enclosed with this office action, paper no. # 8.

Priority

11. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d), based on International Application No. PCT/JP99/02243, filed on 27 April 1999, P10-117537 filed on 27 April 1998.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lam, US Patent No. 5564037 in view of Kamiyama, US Patent No. 5893139.

13. As to Claim 1 and 13, Lam details a system which including 'a data storage and retrieval apparatus having a data processor, including a memory, central processing unit' [col 4, line 14-18, line 24-29], Lam teaches for example file server element 10 is also known as primary storage device is coupled to the secondary storage device element 20 as detailed in fig 1, further fig 1 is considered to be client-server architecture [see col 4, line 24-25], a workstation or computer element 40 is a microprocessor based computer system, typically a central processing unit or CPU on a single chip is called microprocessor, 'first storage medium' [col 4, line 17, fig 1, element 10], examiner

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interpreting first storage medium corresponds to Lam's primary storage device as detailed in fig 1, element 10 or file server, 'performs migration for transferring a file stored in the first storage medium to a second storage medium' [col 4, line 29-34, 37-40, line 47-49], Lam teaches for example migration engine element 11 performs migration for transferring of files on a LAN system fig 1, more specifically NetWare operating system versions 4.x is a Real time data migrator or RTDM feature is included as detailed in col 2, line 60-62, examiner interpreting second storage medium corresponds to Lam's second module or secondary storage device element 20 for example Optical storage device as detailed in fig 1, 'an information acquisition means for reading said access information from the information file stored in the first storage medium' [col 6, line 19-24], 'data processor accesses a migrated file' [col 6, line 22-24], Lam teaches identifying files for migration as detailed in col 6, line 13-15, also Lam specifically teaches for example command to migrate file(s), reading the file and sending or transmit file to secondary storage as detailed in fig 2, 'a file opening means for opening the transferred file in the second storage medium' [see fig 2, especially S1-S3], "a reading means for reading the stored data from the opened file in the second storage medium' [see fig 2, S2-S3, col 6, line 21-23], examiner interpreting second storage medium corresponds to Lam's second module or secondary storage device element 20 for example Optical storage device as detailed in fig 1, 'loading the read data in to a predetermined region on the memory of the data processor' [col 7, line 58-67, col 7, line 15-22, col 8, line 61-64, table 1], loading the read data corresponds to write data of data block as detailed in table 1, Lam specifically teaches for example

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storing data or file based on the predetermined storage hierarchy scheme, 'storing the same threat without transferring to or storing the read data to the first storage medium' [col 8, line 58-60], Lam specifically teaches generating sparse file in the primary storage device storing the same contents without transferring, 'memory is directly coupled to the central processing unit' [see Lam: fig 1, col 4, line 13-34; Kamiyama: col 4, line 1-5, fig 1, fig 27], as best understood by the examiner both Lam and Kamiyama teach for example memory, CPU and their relationship with respect to management of information. It is noted that a computer system generally consists of a central processing unit or CPU, primary storage, secondary storage, and input/output devices, further it is common knowledge that CPU contains ALU, control unit, and temporary storage locations called registers, generally storage or memory is coupled to CPU because memory may hold programs, data that are currently in use by the CPU, further instructions and data are moved continuously between storage or memory and CPU during program execution. It is also common knowledge that I/O devices are the means by which the CPU communicates with the external world for example with users or with other computers and like, therefore, memory coupled to the central processing unit is integral part of both Lam and Kamiyama's teaching. It is however noted that Lam does not teach 'access information for the file', although Lam suggests moving preselected files based in infrequently accessed files [see col 4, line 44-46]. On the other hand, Kamiyama teaches a system which including "access information for the file" [see Abstract, fig 2, col 5, line 21-31], also see fig 4 is related to data vs. access frequency, fig 11 is specifically directed to each data or file block associated with access frequency.

It would have been obvious one of the ordinary skill in the art at the time of applicant's invention to incorporate the teachings of Kamiyama into the automatically and transparently migrating data from a file server to an auxiliary storage medium or device of Lam because they are both directed to data storage capable of optimizing the data, more specifically data storage media utilized in a hierarchical structure [see Kamiyama, fig 2, col 1, line 65-67, col 2, line 1-2; Lam Abstract, col 4, line 40-42, especially fig 1, HSM system 2], and both from the same field of endeavor.

One of ordinary skill in the art at the time of the invention would have been motivated to modify the Lam's reference to incorporate the teachings of access information for the file, more specifically modifying Lam's fig 1 to incorporate the access management section, fig 3, element 14 of Kamiyama, because that would have allowed users of Lam's real time migration to control and optimize individual data blocks access frequency, bringing the advantages of optimizing the storage and management of the access frequency of data suggested by Kamiyama [see col 4, line 59-65], thus improving the performance and flexibility of data storage.

14. As to Claim 2, Kamiyama teaches a system which including 'data processor is a computer' [fig 27, col 15, line 23-25].

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15. As to Claim 3, Lam teaches a system which including 'first storage medium' [col 4, line 17, fig 1, element 10], examiner interpreting first storage medium corresponds to Lam's primary storage device as detailed in fig 1, element 10 or file server, hard disk is integral part of a computer.

16. As to Claim 4, Lam teaches a system which including 'second storage medium is a removable medium' examiner interpreting second storage medium corresponds to Lam's second module or secondary storage device element 20 for example Optical storage device as detailed in fig 1.

17. As to Claims 5 and 14, Lam teaches a system which including ' data processor determines a priority of migration based on a predetermined standard for a plurality of files stored on the first storage medium and performs the migration' [col 5, line 11-26], on the other hand, Kamiyama teaches 'file with the highest priority' [fig 6, col 7, line 11-25], Kamiyama specifically teaches access management section containing low, intermediate, high, and ultra high frequency management section containing the file information as detailed in fig 6.

18. As to Claims 6, 15, and 17, Kamiyama teaches a system which including 'file stored on the first storage medium has an information region for storing file management information' [fig 7-8, col 7, line 60-67, col 8, line 1-5], 'data region for storing data' [col 8, line 2-3], 'information file is generated in the first storage medium' [col 7, line 60-65], Lam teaches 'all of the data of the data region is transferred to the second storage medium by migration' [col 6, line 13-24], especially, data blocks of the file which are to be migrated are transmitted to the secondary storage device, element 20 as detailed in col 6, line 21-23.

19. As to Claim 7, Kamiyama teaches a system which including 'information file contains the file management information' [fig 12, element 22a], 'access information to the file transferred to the secondary storage medium' [col 6, line 8-12], Lam teaches 'size information of the file on the first storage medium before the migration' [col 5, line 46-50, col 6, line 5-6, line 11-13].

20. As to Claim 8 and 16, Kamiyama teaches a system which including 'data region of the file on the first storage medium is opened up after the information file is generated' [col 5, line 21-27], Kamiyama teaches for example data items are stored in a hierarchical structure based on ultra high frequency access data, high frequency access data and like, more specifically, ultra high frequency access data is stored into the semiconductor memory, element 3, while high frequency access data is stored into the magnetic disk device, element 4 as detailed in col 5, line 21-25.

21. As to Claim 9, Lam details a system which including 'file including the transferred file' [col 6, line 26-27], on the other hand Kamiyama teaches 'access information to the data is formed in the second storage medium' [col 5, line 24-35, fig 2].

22. As to Claims 10 and 12, Kamiyama teaches a system which including 'file opening means generates a file descriptor specifying a file transferred to the second storage medium based on the access information' [col 5, line 7-12, fig 4, fig 7], examiner interpreting file descriptor corresponds to Kamiyama's file ID as detailed in fig 7.

23. As to Claim 11, Kamiyama teaches a system which including 'reading means reads the content of the file opened by the opening means based on the file descriptor and stores it in a predetermined region of the memory of the data processor' [col 17, line 10-28].

Response to Arguments

Applicant's arguments filed on 2/24/2003 have been fully considered, but they are not persuasive, for examiner's response see discussion below:

24. At page 3, Claims 1-17, Lam appears to disclose that the tertiary storage 30 (memory) is not directly coupled to the plurality of workstations 40 (CPU).

25. At page 4, accordingly such demigration process does not load data to the tertiary storage without transferring the data.....

As to the above arguments, as best understood by the examiner Lam is directed to real time data migration system, more specifically real time data migration in a networked computer system [see Abstract], It is also noted that Lam specifically teaches for example networked computer system employing storage management that specifically containing secondary storage, tertiary storage and like [see fig 1].

As best understood by the examiner both Lam and Kamiyama teach for example memory, CPU and their relationship with respect to management of information. It is noted that a computer system generally consists of a central processing unit or CPU, primary storage, secondary storage, and input/output devices, further it is common knowledge that CPU contains ALU, control unit, and temporary storage locations called registers, generally storage or memory is coupled to CPU because memory may

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hold programs, data that are currently in use by the CPU, further instructions and data are moved continuously between storage or memory and CPU during program execution. It is also common knowledge that I/O devices are the means by which the CPU communicates with the external world for example with users or with other computers and like, therefore, memory coupled to the central processing unit is integral part of both Lam and Kamiyama's teaching

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Conclusion

The prior art made of record

- a. US Patent No. 5564037
- b. US Patent No. 5893139

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure

- c. US Patent No. 5765204
- d. US Patent No. 6094723
- e. US Patent No. 6223247
- f. US Patent No. 6269420
- g. US Patent No. 5403639
- h. US Patent No. 6065065
- i. US Patent No. 5675781
- j. US Patent No. 5978815
- k. US Patent No. 5495607
- l. US Patent No. 5333311

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Srirama Channavajjala whose telephone number is (703) 308-8538. The examiner can normally be reached on Monday-Friday from 8:00 AM to 5:30 PM Eastern Time. The TC2100's Customer Service number is (703) 306-5631.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Breene, can be reached on (703) 305-9790. The fax phone numbers for the organization where the application or proceeding is assigned are as follows:

703/746-7238	(After Final Communication)
703/746-7239	(Offical Communications)
703/746-7240	(For Status inquiries, draft communication)
(703) 308-6606	(Art Unit)

Any inquiry of general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-9600.

SC 
Patent Examiner.
March 7, 2003.

SRIRAMA CHANNAVAJJALA
PRIMARY EXAMINER